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| Notice of Allowability | Application No. | Applicant(s) | |
| | 10/697,257 | NGUYEN ET AL. | |
| | Examiner | Art Unit | |
| | Daniel Pan | 2183 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on 12/22/04.
2. ☒ The allowed claim(s) is/are 8-28 (claims 1-7 have been canceled).
3. ☒ The drawings filed on 31 October 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date <u>12/22/04, 08/30/04</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>attached</u>. 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other _____. |
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Reasons for Allowance/Examiner's Amendment

The following is directed to brief applicable reasoning of Obviousness Double Patenting rejections which might have been used by Examiner. In response, TDs have been filed to avoid the potential rejections by applicant. Applicant is welcome to provide feedback or suggestions in response.

1) Nguyen et al. (5,539,911), current claim 8 did not recite the first and second buffers as recited in the copending claim 1. However, current claim 8 included an instruction buffer in a superscalar microprocessor. One of ordinary skill in the art should be able to recognize the use of more than one instruction buffer to adapt to the need of increasing number of the instructions at a given cycle in the superscalar processing environment.

2) Nguyen et al. (5,689,720), current claim 8 did not recite the four instruction fetch in FIFO as recited in the patent claim 1. However, current claim 8 taught identifying maximum of N instructions available for execution. It would have been obvious because the maximum N instructions could be applicable in any number of instructions.

3) Nguyen et al. (6,092,181), current claim 8 did not recite the temporary register for storing the out-of-order execution results as recited in patent claim 1. However, current claim 8 taught an issue control for issuing the instructions without regard of the

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program order. One of ordinary skill in the art should be able to recognize the issue control regardless of the program order would have resulted the need of using a storage, or a register for holding the execution immediate data resulted from a previously executed instruction in order to produce the data result at a specific sequence, and therefore, in doing so, provide a motivation.

3) Nguyen et al. (6,038,654), current claim 8 did not specifically recite the instruction buffer was FIFO as recited in patent claim 1. However, current claim 8 recited the sequential program order, therefore, it would have been obvious to one of ordinary in the art to include the FIFO because one of ordinary skill in the art should be able to recognize the use of sequential order, such as the first in first out, into the instruction buffer in order to maintain the instruction sequence of the superscalar.

4) Nguyen et al. (6,256,720), current claim 8 did not recite the four instruction fetch in FIFO as recited in the patent claim 1. However, current claim 8 taught identifying maximum of N instructions available for execution. It would have been obvious because the maximum N instructions could be applicable in any number of instructions. As to the FIFO, claim 8 recited the sequential program order, therefore, it would have been obvious to one of ordinary in the art to include the FIFO because one of ordinary skill in the art should be able to recognize the use of sequential order, such as the first in first out, into the instruction buffer in order to maintain the instruction sequence of the superscalar.

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5) Nguyen et al. (6,647,485), see paragraph 4-7 of the last Office action.

Nguyen et al. (10/282,045) current claim 8 did not specifically recite the instruction buffer was FIFO as recited in copending claim 8. However, current claim 8 recited the sequential program order, therefore, it would have been obvious to one of ordinary skill in the art to include the FIFO because one of ordinary skill in the art should be able to recognize the use of sequential order, such as the first in first out, into the instruction buffer in order to maintain the instruction sequence of the superscalar.

Nguyen et al. (10/282,207), Nguyen et al. (10/283,177), current claim 8 did not specifically recite the prefetch control unit as recited in copending application. However, current claim 8 recited a conditional branch. It would have been obvious to one of ordinary skill in the art to include the prefetch control because one of ordinary skill in the art should be able to recognize the conditional branch was applicable to fetch the instruction ahead of the fetch stage based on a predetermined condition of the branch in order to enhance the processing bandwidth.

6) Nguyen et al. (10/283,106), current claim 8 did not recite the first and second buffers as recited in the copending claim 1. However, current claim 8 included an instruction buffer in a superscalar microprocessor. One of ordinary skill in the art should be able to recognize the use of more than one instruction buffer to adapt to the need of increasing number of the instructions at a given cycle in the superscalar processing environment.

7) Nguyen et al. (10/660,671), Nguyen et al. (10/700,485), the current claim 8 did not recite the branch bias for the branch taken and not taken as recited in the copending

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claims 8. However, it would have been obvious to one of ordinary skill in the art to include the branch taken and not taken because current claim 8 also taught a conditional branch, and one of ordinary skill in the art should be able to recognize the use of the taken and not taken in order to indicate the possible outcome of the branch based on the predefined condition, and therefore, increasing the ability to predict the likelihood branch operations.

8) Nguyen et al. (10/700,520), current claim 8 did not teach the computer including a memory in addition to the superscalar microprocessor as recited in the copending claim 8. However, no specific structure of the memory has been reflected into the claim, therefore, it is assumed to be a general type of memory, and one of ordinary skill in the art should be able to include a general type of memory into a superscalar processor because it would enhance the system structure, and therefore, the compatibility of the system.

Examiner's Amendment

The following is directed to the language change in the claims to clarify the language format :

Authorization for this examiner's amendment was given in a telephone interview with Tom Fiala on 02/17/05.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

In the claims :

- a) claim 8, line 16, replace "may include" by --includes--;
- b) claim 13, line 11, replace "may include" by --includes--;
- c) claim 18, line 19 in page 7 of the amendment, replace "may include" by --includes--.

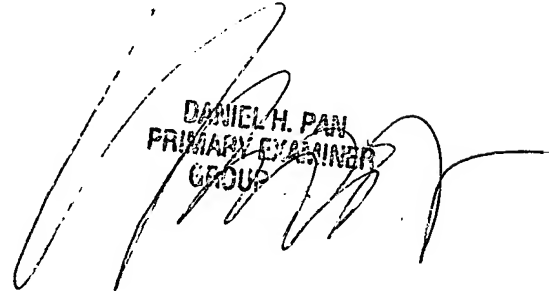
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dan Pan whose telephone number is 703 305 9696, or the new number 571 272 4172. The examiner can normally be reached on M-F from 8:30 AM to 4:00 PM.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chan, can be reached on 703 305 9712, or the new number 571 272 4162. The fax phone number for the organization where this application or proceeding is assigned is 703 306 5404.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

21 Century Strategic Plan


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